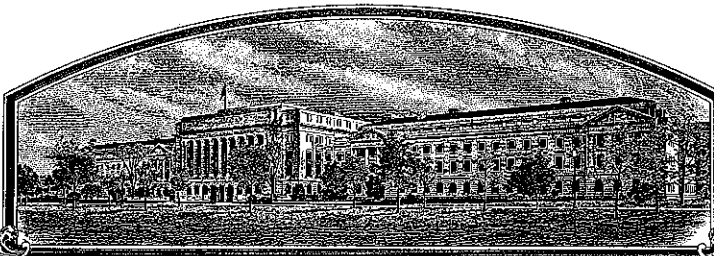


No.

200100131



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

## California Planting Cotton Seed Distributors

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR CONDITIONING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED IN THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE MARKED BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF SEEDS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

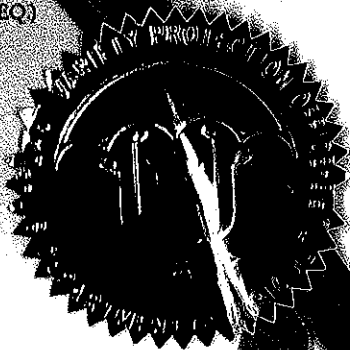
COTTON

'Acala BXN Nova'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this twenty-fifth day of August, in the year two thousand and five.

Attest:  
  
Commissioner  
Plant Variety Protection  
Agricultural Marketing

  
Secretary of Agriculture



200100131

REPRODUCE LOCALLY. Include form number and date on all reproductions.

FORM APPROVED - OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY DIVISION - PLANT VARIETY PROTECTION OFFICEAPPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE  
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate)		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
California Planting Cotton Seed Distributors		CPCSD Acala C-181	Acala BXN Nova
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)		5. TELEPHONE (include area code)	FOR OFFICIAL USE ONLY PVPO NUMBER 200100131
PO Box 80357 Bakersfield, CA 93380-0357		661-399-1400	
7. GENUS AND SPECIES NAME		6. FAX (include area code)	FILING DATE
Gossypium hirsutum L.		661-399-3169	March 12, 2001
8. FAMILY NAME (Botanical)		FILING AND EXAMINATION FEE:	
Malvaceae		\$ 2705	
9. CROP KIND NAME (Common name)		DATE	
Acala Cotton		March 12, 2001	
10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) (Common name)		CERTIFICATION FEE:	
Corporation		\$ 432.00	
11. IF INCORPORATED, GIVE STATE OF INCORPORATION		DATE	
California		AUG. 15, 2003	
11. IF INCORPORATED, GIVE STATE OF INCORPORATION		12. DATE OF INCORPORATION	
California		May 13, 1936	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS		14. TELEPHONE (include area code)	
Mr. Bill Van Skike PO Box 80357 Bakersfield, CA 93380-0357		661-746-3366	
Dr. Stephen R. Oakley 30597 Jack Avenue Shafter, CA 93263		16. FAX (include area code)	
		661-746-6905	
16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)			
a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of the Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Applicant's Ownership f. <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in an approved public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,450), made payable to "Treasurer of the United States" (Mail to PVPO)			
17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY, AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act)			
<input checked="" type="checkbox"/> YES (If "yes," answer items 18 and 19 below) <input type="checkbox"/> NO (If "no," go to item 20)			
18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?		19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?	
<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		<input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED	
20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?			
<input type="checkbox"/> YES (If "yes," give names of countries and dates) <input checked="" type="checkbox"/> NO			
21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.			
The undersigned applicant(s) is(are) the owner(s) of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.			
Applicant(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.			
SIGNATURE OF APPLICANT (Owner(s))		SIGNATURE OF APPLICANT (Owner(s))	
NAME (Please print or type)		NAME (Please print or type)	
William W. Van Skike		Stephen R. Oakley	
CAPACITY OR TITLE	DATE	CAPACITY OR TITLE	DATE
President	28 Feb 2001	Director of Research	28 Feb 2001

**Exhibit A. Origin and Breeding History of Acala BXN Nova.**

Acala BXN Nova was developed by the backcross (BC) breeding method in an effort to develop a variety of BXN, or Buctril® tolerant, Acala Maxxa. Acala Maxxa is currently the most widely planted cotton variety in California, while the BXN trait allows foliar applications of the Aventis herbicide Buctril® to control problem broadleaf weeds such as nightshade and morning glory. The combination of Acala Maxxa and the BXN trait would provide an important tool for San Joaquin Valley (SJV) cotton growers to deal with some difficult weed species.

This breeding effort began in 1995 by crossing Stoneville BXN57 with Acala Maxxa to produce the F1 progeny which was then backcrossed with Maxxa as the recurrent parent. Acala Maxxa is protected under PVP certificate number 9000168 issued to the California Planting Cotton Seed Distributors, while Stoneville BXN 57 is protected under PVP application number 9500139 filed by the Stoneville Pedigreed Seed Company, Inc. This BC process was repeated four times, to produce a BC4F1 population with a minimum homozygosity level of 94% for the recurrent parent (Acala Maxxa). The BC4F1 population was selfed, treated with Buctril®, and selected for recurrent parent phenotype for two generations to produce a BC4F3 population. The Buctril tolerant characteristic of Acala BXN Nova is a genetic trait so the possibility of outcrossing and mechanical contamination may affect the genetic purity of this variety. To ensure genetic purity of the BXN trait every plant in every generation of this program was treated with a foliar application of Buctril® 4EC herbicide to screen out and remove susceptibles, or non-BXN individuals. The varietal genetic purity for the BXN transgene in Acala BXN Nova exceeds 99%.

In 1997 the BC4F3 population was planted in the SJV, and individual plants were selected and grown as plant rows in winter nursery 1997-98. In 1998 plant rows again tested for BXN genetic purity, and selected for recurrent parent type, were bulk harvested for winter increase in 1998-99 and this seed became the basis for CPCSD C-181 seed production and testing in 1999.

CPCSD C-181 was entered into the San Joaquin Valley Cotton Board (SJVCB) testing program in 1998 and continued through the 2000 season. It is anticipated that CPCSD C-181 will be approved by the SJVCB in March, 2001. CPCSD C-181 has been renamed Acala BXN Nova for commercial reproduction, and marketing began in 2000.

During evaluation the frequency and occurrence of variants has been too low for meaningful measurement and Acala BXN Nova has been uniform and stable

**Exhibit A. Origin and Breeding History of Acala BXN Nova.**

<b><u>Year</u></b>	<b><u>Activity</u></b>
1995	Cross: Acala Maxxa X Stoneville BXN 57.
1995-96	Backcrossing with Acala Maxxa (recurrent parent) to produce BC4F1.
1996	Selfing to produce BC4F3.
1997-98	Plant selections, evaluation, screening and seed increase.
1998	Entered into SJVCB testing program as CPCSD C-181.
1999	Continued in SJVCB testing program as CPCSD C-181.
2000	Continued in SJVCB testing program as CPCSD C-181. Marketing of CPCSD C-181 as Acala BXN Nova.
2001	Anticipated release of Acala BXN Nova by SJVCB in March, 2001.

**Exhibit B. Statement of Distinctness of Acala BXN Nova.**

Acala BXN Nova is the first Buctril® tolerant Acala variety that has been bred and adapted for the San Joaquin Valley of California, and it may provide an economic benefit to producers as an alternative technology to deal with difficult broadleaf weed species.

Acala BXN Nova is tolerant of foliar applications of the herbicide Buctril® while Acala Maxxa is highly susceptible (Table 1.). Comparisons between Acala Maxxa and Acala BXN Nova (C-181) show that these two varieties are similar in yield, plant, and fiber traits (Table 2), but differ in yarn strength and Verticillium wilt tolerance.

Acala BXN Nova is clearly a distinct cotton variety, compared with Acala Maxxa, because its of Buctril® herbicide tolerance and slightly lower yarn strength and Verticillium wilt tolerance.

Table 1. CPCSD 1998: Effect of Buctril Herbicide on Plant Stands

<u>Variety</u>	<u>Percent Survival</u>
Maxxa	0.6
BXN Nova	99.7
LSD.05	4.2
CV%	8.8

Table 2. SJVCB 1998-99: Yield, Plant and Fiber Traits

<u>Variety</u>	<u>Lint Yield (lbs/A)</u>	<u>Fiber Length (inches)</u>	<u>Fiber Strength (g/tex)</u>	<u>Mic</u>	<u>22's Yarn Strength (g/tex)</u>	<u>Plant Height (inches)</u>	<u>Vert Wilt Score*</u>
Maxxa	1263	1.18	24.5	4.23	147	39	20
BXN Nova	1282	1.18	23.7	4.29	140	39	26
LSD.05	ns	ns	ns	ns	4	ns	4

\*% Verticillium wilt defoliation on Oct 1st

U.S. DEPARTMENT OF AGRICULTURE  
PLANT VARIETY PROTECTION OFFICE, AMS, USDA  
NATIONAL AGRICULTURAL LIBRARY Bldg., Rm. 500  
10301 BALTIMORE Blvd.  
BELTSVILLE, MD 20705

OBJECTIVE DESCRIPTION OF VARIETY  
COTTON (*Gossypium* spp.)

NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
California Planting Cotton Seed Distributors	CPCSD Acala C-181	Acala BXN Nova

ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code)

PO Box 80357  
Bakersfield, CA 93380-0357

FOR OFFICIAL USE ONLY  
PVPO NUMBER

200100131

Place the appropriate data that describes the varietal characteristic of this variety in the space provided. Characteristics described, including numerical measurements, should represent those that are typical for the variety. Royal Horticultural Society or any recognized color fan may be used to determine plant colors. Characters marked with an asterisk \* indicate necessary characters to be measured.

SPECIFIC VARIETIES USED FOR COMPARISON AS CHECK VARIETIES IN THIS APPLICATION: Use standard regional check varieties which are adapted to your area. One of the comparison varieties must be the most similar variety used in Exhibit B.

Variety 1. Acala Maxxa Variety 2. \_\_\_\_\_ Variety 3. \_\_\_\_\_

\*1. SPECIES:

X *G. hirsutum* L. \_\_\_\_\_ *G. barbadense* L.

\*2. AREA(S) OF ADAPTATION: (A = Adapted, NA = Not Adapted, NT = Not Tested)

<u>      </u> Eastern	<u>      </u> Delta	<u>      </u> Central	<u>      </u> Blacklands
<u>      </u> Plains	<u>      </u> Western	<u>      </u> Arizona	<u>X</u> San Joaquin
<u>      </u> Other (Specify): _____			

3. GENERAL: Characteristics which are known to be variable but are still useful for a meaningful description of the variety.

	Acala BXN Nova Application Variety	Acala Maxxa Comparison Variety 1	Comparison Variety 2	Comparison Variety 3
<b>Plant Habit:</b>				
Spreading, Intermediate, Compact	<u>I</u>	<u>I</u>	_____	_____
<b>Foliage:</b>				
Sparse, Intermediate, Dense	<u>I</u>	<u>I</u>	_____	_____
<b>Stem Lodging:</b>				
Lodging, Intermediate, Erect	<u>E</u>	<u>E</u>	_____	_____
<b>Fruiting Branch:</b>				
Clustered, Short, Normal	<u>N</u>	<u>N</u>	_____	_____
<b>Growth:</b>				
Determinate, Intermediate, Indeterminate	<u>Intermediate</u>	<u>Intermediate</u>	_____	_____
<b>Leaf Color:</b>				
Greenish yellow, Light green, Medium green, Dark green	<u>MG</u>	<u>MG</u>	_____	_____

## 3. GENERAL: (continued)

Boll Shape: Length less than width,  
Length equal to width,  
Length more than width

more

more

Boll Breadth: Broadest at base,  
Broadest at middle

middle

middle

\*4. MATURITY: (50 % Open bolls; Preferred method; Describe method if different method was used.) % Open on Oct. 1

Date of 50 % open bolls

40

40

## 5. PLANT:

Cm to 1st Fruiting Branch:  
(from cotyledonary node)

15.5

15.4

No. of Nodes to 1st Fruiting Branch:  
(excluding cotyledonary node)

5.5

5.2

Mature Plant Height cm:  
(from cotyledonary node to terminal)

74.0

73.2

\*6. LEAF: Upper most, fully expanded leaf.

Type: Normal, Sub Okra,  
Okra, Super Okra

N

N

Pubescence: Absent, Sparse,  
Medium, Dense OR Trichomes/cm<sup>2</sup>  
(Bottom surface excluding veins)

M

M

Nectaries: Present or Absent

P

P

\*7. STEM PUBESCENCE:

Glabrous, Intermediate, Hairy

I

I

\*8. GLANDS: (Gossypol) Absent, Sparse, Normal, More Than Normal

Leaf:

N

N

Stem:

N

N

Calyx Lobe: (normal is absent)

A

A

## \*9. FLOWER:

Petals: Cream, Yellow

C

C

Pollen: Cream, Yellow

C

C

Petal Spot: Present, Absent

A

A

## \*10. SEED:

Seed Index:  
(g/100 seed, fuzzy basis)

12.6

12.7

Lint Index:  
(g lint/100 seeds)

10.1

10.0





14. NEMATODES, INSECTS AND PESTS: (NT = Not Tested, S = Susceptible, MS = Moderately Susceptible, MR = Moderately Resistant, R = Resistant)

\_\_\_\_ Root-Knot Nematode

\_\_\_\_ Reniform Nematode

\_\_\_\_ Boll Weevil

\_\_\_\_ Grasshopper (specify species): \_\_\_\_\_

\_\_\_\_ Bollworm

\_\_\_\_ Lygus (specify species): \_\_\_\_\_

\_\_\_\_ Cotton Aphid

\_\_\_\_ Pink Bollworm

\_\_\_\_ Cotton Fleahopper

\_\_\_\_ Spider Mite (specify species): \_\_\_\_\_

\_\_\_\_ Cotton Leafworm

\_\_\_\_ Stink Bug (specify species): \_\_\_\_\_

\_\_\_\_ Cutworm (specify species): \_\_\_\_\_

\_\_\_\_ Thrips (specify species): \_\_\_\_\_

\_\_\_\_ Fall Armyworm

\_\_\_\_ Tobacco Bud Worm

\_\_\_\_ Other (specify): \_\_\_\_\_

15. COMMENTS: Present any additional information that cannot adequately be described in 1 through 13 which significantly distinguishes your variety.

Acala BXN Nova was developed through a backcross breeding program with Acala Maxxa as the recurrent parent. Acala BXN Nova and Acala Maxxa are very similar, with the exception that Nova has the BXN transgenic trait for Buctril herbicide tolerance.

**Exhibit D. Additional Description of Acala BXN Nova****1998 SJVCB Acala Variety Test**

Characteristic	Maxxa	BXN® Nova	LSD.05	CV%
<b>Yield</b>				
Lint (lbs/A)	1048	1069	ns	4.9
Gin Turnout (%)	34.0	33.5	0.5	1.3
<b>Plant Traits</b>				
Height (inches)	39	39	ns	6.6
Boll weight (g)	5.8	6.1	ns	10.2
Vert Wilt (% def Sep 15)	17	19	ns	18.3
Maturity (% Open Oct 1)	40	40	ns	21.9
<b>HVI Fiber Quality</b>				
Length (inches)	1.19	1.19	ns	1.2
Uniformity (%)	84.5	84.8	ns	0.8
Strength (g/tex)	34.4	34	ns	3.1
Elongation (%)	5.6	5.7	ns	2.3
Micronaire	4.33	4.27	ns	4.1
<b>Yarn Strength</b>				
22's Yarn Tenacity (lbs)	156	149	3	2.3
50's Break Factor-Card	2598	2514	ns	3.6
50's Break Factor-Comb	2928	2858	61	1.8
<b>AFIS</b>				
Standard Fineness	180	181	ns	1.1
Fiber Fineness	169	170	ns	1.7
Maturity Ratio	0.940	0.941	ns	1.1
Micronaire	4.200	4.180	ns	2.7
<b>Trash Content</b>				
Short Fiber (%)	5.200	5.200	ns	9.7
Non-lint %	2.900	3.100	ns	12.8
Seed Coat Frag (per 5 g)	64	58	ns	23.9

**Exhibit D. Additional Description of Acala BXN Nova****1999 SJVCB Acala Variety Test**

Characteristic	Maxxa	BXN® Nova	LSD.05	CV%
<b>Yield</b>				
Lint (lbs/A)	1478	1494	ns	4.7
Gin Turnout (%)	35.9	35.3	0.3	1.8
<b>Plant Traits</b>				
Height (inches)	40	40	ns	9.7
Boll weight (g)	6.9	6.2	0.5	10.5
Vert Wilt (% def Sep 15)	23	32	5	16.7
Maturity (% Open Oct 1)	63	68	ns	16
<b>HVI Fiber Quality</b>				
Length (inches)	1.15	1.15	ns	1.5
Uniformity (%)	83	82.5	ns	0.8
Strength (g/tex)	33.5	33.2	ns	3.1
Elongation (%)	7.4	7.5	ns	5.9
Micronaire	3.94	4.04	ns	3.7
<b>Yarn Strength</b>				
22's Yarn Tenacity (lbs)	137	130	4	2.9
50's Break Factor-Card	2554	2356	57	1.9
50's Break Factor-Comb	2919	2673	55	1.6
<b>AFIS</b>				
Standard Fineness	180	184	1	1
Fiber Fineness	159	163	2	1.6
Maturity Ratio	0.886	0.884	ns	1.2
Micronaire	4.040	4.020	ns	3.1
<b>Trash</b>				
Short Fiber (%)	6.800	6.900	ns	7.6
Non-lint %	3.000	3.300	ns	14.3
Seed Coat Frag (per 5 g)	64	61	ns	20.3

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Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

STD-470-E (03-96)